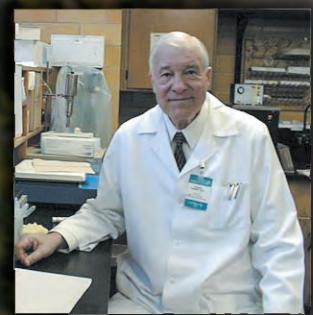


Missouri Arthritis Report 2001



 Arthritis
Bureau of Chronic
Disease Control

MISSOURI DEPARTMENT OF
HEALTH

 ARTHRITIS
FOUNDATION®
Take Control. We Can Help.™

PREFACE

I am pleased to present the "Missouri Arthritis Report 2001". This report provides information, data, management methods, community strategies and resources for improving the quality of life for the 1.5 million Missouri adults with arthritis.

Arthritis and related diseases have long been recognized as a burden to individuals in the state of Missouri. However, only recently has there been a nationwide focus on arthritis as a major public health concern and a major economic cost to society.

Arthritis is the leading cause of disability in the United States. In Missouri one out of every three adults, or 1.5 million individuals has arthritis.

This report provides suggested strategies to control and reduce disability associated with arthritis. I encourage communities and health care providers to implement these strategies. By coordinating efforts and collaborating with existing agencies and organizations, we can maximize resources to improve arthritis-related quality of life in our communities.

The Bureau of Chronic Disease Control and the joint efforts of many individuals and organizations provided the information for this report. It represents a coordinated approach to assessing arthritis and related diseases as well as resources to combat its impact on our citizens.

The Missouri Department of Health extends its sincere appreciation to the individuals and organizations for their expertise and contribution. We are pleased to share this report with you and others in the public health community to help guide and direct efforts in reaching our vision of "Healthy Missourians in Healthy Communities." Together we can create a healthier Missouri for ourselves, our children, and future generations!

Sincerely,



Bernard R. Malone, MPA, Director
Division of Chronic Disease Prevention &
Health Promotion
Missouri Department of Health

Missouri Arthritis Report

2001

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**Missouri Department of Health,
Division of Chronic Disease Prevention and Health Promotion
Bureau of Chronic Disease Control**



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INTRODUCTION

ARTHRITIS - A PUBLIC HEALTH

PROBLEM: Nationally, arthritis (refers to a variety of diseases that cause inflammation of joints and tissues) affects nearly 43 million Americans, or one out of every six people, making it one of the most common diseases in the United States.¹ Arthritis is a serious, often misunderstood, and costly public health problem. Currently, an estimated 1.5 million Missourians are living with arthritis and related chronic joint symptoms.²

Arthritis is the leading cause of disability in the United States. It has been estimated that medical care costs for people with arthritis are \$15 billion annually, and total costs (medical care and lost productivity) are estimated at almost \$65 billion annually.³

Arthritis advocates in Missouri have an excellent history of working together to reduce the burden of arthritis in the state. In 1976, an alliance of Missourians affected by arthritis was formed with the support of health professionals, business leaders and public officials. Their work led to the enactment of legislation that formally created the Missouri Arthritis Program. This Program created the development of arthritis networks and partnerships. Its aim is to pro-

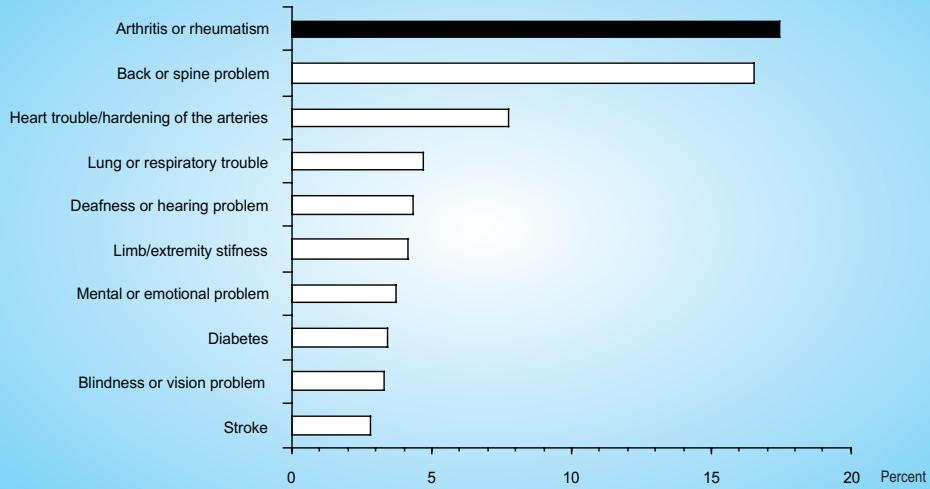
mote optimal health care and quality of life for people with arthritis.

At the same time the Missouri Arthritis Task Force was identifying the steps to address arthritis; the National Arthritis Act was signed into law in 1975 authorizing substantial expansion of arthritis research, training, public education, and treatment. This work led to the creation of Multipurpose Arthritis Centers that conduct comprehensive research on arthritis, and the National Institute of Arthritis and Musculoskeletal and Skin Diseases in the National Institutes of Health.

The sole remaining component was the development of a public health approach to arthritis. The final steps were completed upon the release of the National Arthritis Action Plan: A Public Health Strategy (Nov. 1998). This document serves as a catalyst to the initiation of a nationwide program to measure and reduce the impact of arthritis directed by the Centers for Disease Control and Prevention (CDC).

Missouri, long recognized as a model program for its public health approach for arthritis, was recently awarded a grant by CDC to strengthen the public health infrastructure, to address arthritis and implement interventions, and to reduce the impact of arthritis.

Leading Health Conditions Associated with Disability Among Persons Aged 18 Years or Older, United States, 1999



Source: CDC. Prevalence (%) of disabilities and associated health conditions among adults - United States, 1999. MMWR 2001; 50(7):120-125

PURPOSE:

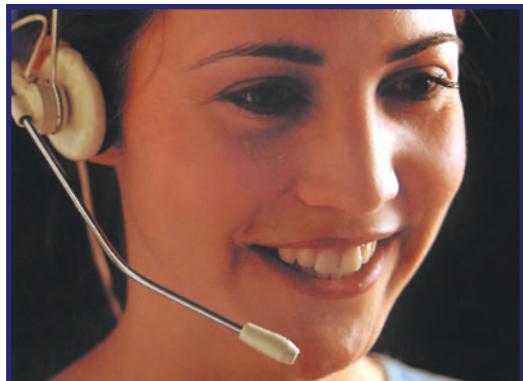
This document describes the disease magnitude and the factors that increase the risk of arthritis and the problems associated with the disease in Missouri. This report also discusses the opportunities for disease management and programs and activities that currently are directed toward these problems, including partnerships, research, education and care.

DATA SOURCES

HIGHLIGHTS

- About 1.5 million people in Missouri have arthritis. This represents 37% of the adult population in the state.
- 32% are younger than 65 years old.
- Of those with physician diagnosed arthritis, 58% do not know what type of arthritis they have and 66% are not receiving medical care for arthritis.
- Arthritis is more common among women (40%) than among men (34%).
- People with arthritis are more likely to report poor physical and/or mental health than people without arthritis.
- People with arthritis are four times more likely to be unable to work when compared to people without arthritis.
- People with arthritis report being inactive and being overweight more often than people without arthritis.

1996 and 1999 Missouri BRFSS



The Missouri Department of Health, Division of Chronic Disease Prevention and Health Promotion, conducts the Behavioral Risk Factor Surveillance System (BRFSS) telephone survey annually, collecting enough data from a representative sample of adults 18 and older to make statewide estimates of behaviors that influence a person's risk of disease. The BRFSS collects information about important public health issues such as smoking, disease, physical activity, and diet. Information in this report is based on responses from the

1996 and 1999 survey years. Data were weighted by gender, race and age to adequately represent the state population. Also, for this report, persons with arthritis are defined as those individuals having either chronic joint symptoms or doctor-diagnosed arthritis. Additional information was obtained from the Missouri Department of Health (MDOH), Center for Health Information Management and Evaluation (CHIME) which maintains the Patient Abstract System that monitors inpatient (hospitalization) and outpatient (emergency room utilization) services. This report is based upon utilization data where either osteoarthritis or rheumatoid arthritis was listed as the primary diagnosis. If you desire more details or additional information pertaining to this report, please call 800-316-0935.

WHAT IS ARTHRITIS?

Arthritis is one of Missouri's most prevalent chronic health problems, affecting as many as 1.5 million residents 18 years of age and older. The word arthritis applies to more than 100 different conditions of unknown or varied causes. Joint involvement is the most characteristic aspect of arthritis, but various forms can also result in such problems as kidney disease, blindness and premature death. Arthritis causes pain, loss of movement and sometimes swelling of joints and tissues.

Some common forms of arthritis include:

- Osteoarthritis: a degenerative joint disease in which the cartilage that covers the ends of bones in the joint deteriorates, causing pain and loss of movement as bone begins to rub against bone. It is the most common form of arthritis.
- Rheumatoid arthritis: an autoimmune disease in which the joint lining becomes inflamed as part of the body's immune system activity. Rheumatoid arthritis is one of the most serious and disabling types.

ARTHRITIS (Rheumatic Disease)

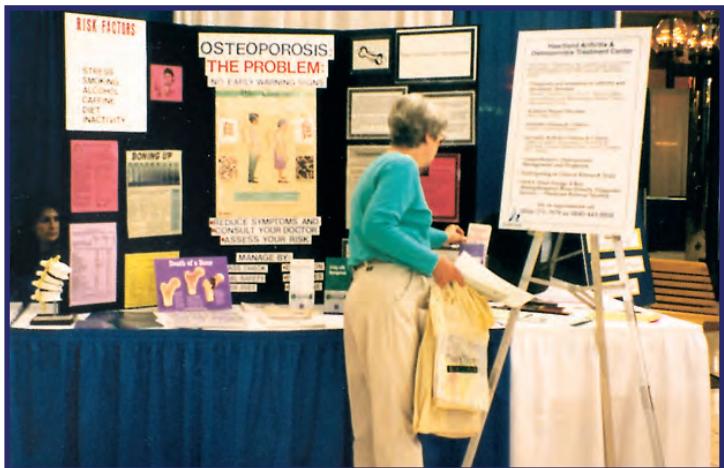
Refers to over 100 different diseases, conditions, and syndromes of unknown or varied causes including:

- Osteoarthritis
- Rheumatoid Arthritis
- Fibromyalgia
- Gout
- Ankylosing Spondylitis
- Juvenile Arthritis
- Systemic Lupus Erythematosus
- Scleroderma

- Fibromyalgia: a syndrome in which widespread pain affects the muscles and attachments to bone.
- Gout: usually the result of a defect in body chemistry. This painful condition most often attacks small joints, especially the big toe.
- Ankylosing spondylitis: a type of arthritis that affects the spine.
- Juvenile arthritis: a general term for all types of arthritis that occur in children. Children may develop juvenile rheumatoid arthritis or childhood forms of lupus, ankylosing spondylitis or other types of arthritis.
- Systemic lupus erythematosus (lupus or SLE): a serious autoimmune disorder that can inflame and damage joints and other connective tissues throughout the body.
- Scleroderma: an autoimmune disease of the body's connective tissue that causes a thickening and hardening of the skin.

Because chronic conditions such as arthritis contribute to deteriorating function and often inactivity, they can in turn increase stress and depression, leading to a downward spiral in health status.

The lives of people with arthritis can be improved even though there is no cure for most forms. Effective interventions to prevent arthritis and its complications are discussed on page 10.



WHO GETS ARTHRITIS?

Approximately 1 in 3 or 37% of the adult population in Missouri have arthritis. (Figure 1) Persons with arthritis are defined as those individuals having either chronic joint symptoms and/or physician-diagnosed arthritis. Arthritis occurs more frequently than any other chronic disease. (Table 1)

Arthritis affects people in all age groups including as many as 285,000 children in the United States. Missouri has the twelfth largest aging population in the United States.⁴ Arthritis is much more prevalent in older populations. Therefore, arthritis will become more prevalent and have a greater impact as the state's population continues to age.

Women are twice as likely to have some form of arthritis than men. For example, Systemic Lupus Erythematosus (SLE) affects five women for every man. Some types of arthritis are more common among certain populations. In addition to older adults and women, groups shown to have higher rates of the following types of arthritis include African Americans (lupus and gout), and Hispanics (osteoporosis). Other groups shown to have a higher prevalence of arthritis include people with low incomes and people with less than a high school education.

Some factors that may increase risks for osteoarthritis include: heredity, obesity, muscle weak-

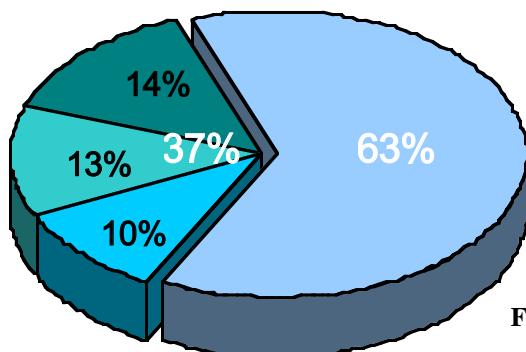


Figure 1

37% OF MISSOURIANS REPORT HAVING ARTHRITIS

Of the total population:

14% = Physician Diagnosed Arthritis,
Chronic Joint Symptoms

13% = Physician Diagnosed Arthritis,
No Chronic Joint Symptoms

10% = Chronic Joint Symptoms,
No Physician Diagnosed Arthritis

ness, bone disease (metabolic), injury, overuse of joints, damage to nerves supplying the joint area, and disease of the synovium.

Table 1

ESTIMATED DISEASE PREVALENCE (%) IN MISSOURI

ARTHRITIS [^]	37.0	LUNG CANCER [*]	7.8
HYPERTENSION [^]	27.3	COLORECTAL CANCER [*]	5.5
BREAST CANCER [^]	14.4	DIABETES [^]	4.8
OSTEOPOROSIS ^{**}	12.6	ISCHEMIC HEART DISEASE [^]	4.5
PROSTATE CANCER [*]	11.4	STROKE [^]	2.3
COPD [~]	8.5		

[^] Missouri BRFSS, 1999

^{*} Estimated prevalence using Dismod and Incidence Rates from CDC Wonder, 1997

^{**} Missouri BRFSS, 1999: Physician Diagnosed, Women 45+

[~] Chronic Obstructive Pulmonary Disease (COPD)

WHO GETS ARTHRITIS? continued

This section of the report highlights new statistics and presents the prevalence (percentage) of arthritis among adults 18 and older in Missouri by selected demographic groups. Data is from the 1999 Missouri BRFSS.

Figure 2: Percent of All Adults with Arthritis, by Age-Group

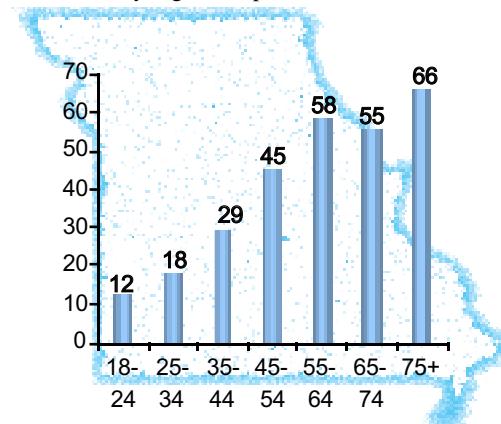


Figure 3: Percent of All Adults with Arthritis, by Race

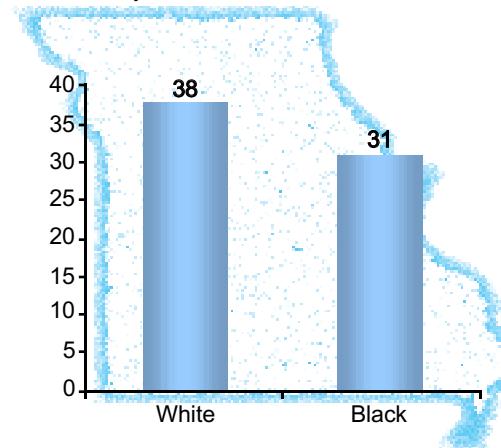
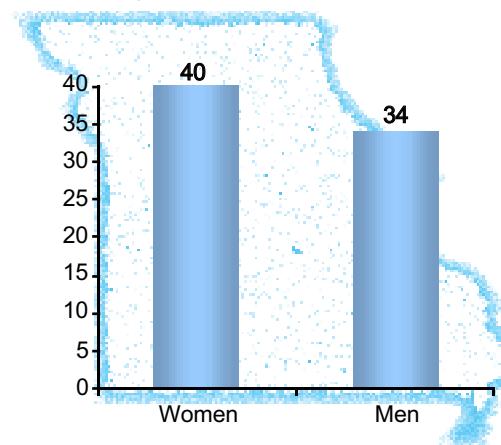


Figure 4: Percent of Adults with Arthritis, by Gender



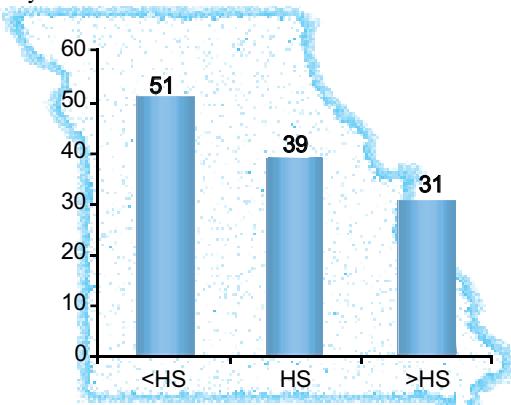
Age: Among Missourians older than 55 years, over half reported having arthritis. The prevalence of arthritis increases with age, from 18% among those 25-34 years old to 66% among those 75 years and older. People over 65 have the highest prevalence of arthritis and activity limitation.

Race: All races are affected by arthritis with almost equal frequency. Some types of arthritis are more common than others in certain populations. The prevalence of arthritis is 38% among Caucasians (white), 31% among African Americans (black), 33% among Hispanics, and 23% among all other racial ethnic groups.

Gender: Arthritis affects both men and women. However, women are more likely to be affected. The prevalence of arthritis is 40% among women compared to 34% among men.

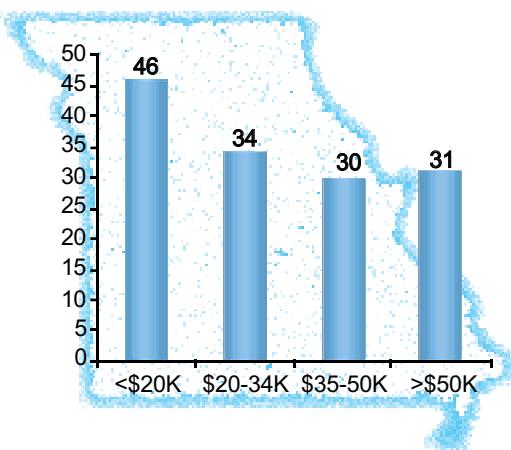
Education: Individuals with less than a high school education have a significantly higher prevalence of arthritis than individuals with a high school or higher education. In Missouri, half of the people with arthritis have less than a high school education.

Figure 5: Percent of All Adults with Arthritis, by Education Level



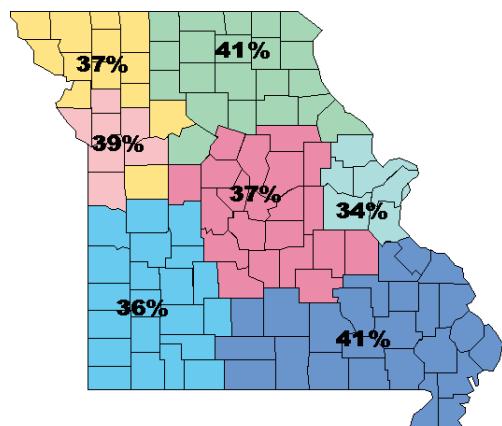
Income: Of Missourians with arthritis, 46% have an annual household income of less than \$20,000 a year compared to the prevalence of arthritis among people with higher income levels (30%-34%).

Figure 6: Percent of All Adults with Arthritis, by Annual Household Income in Thousands



Geographic Distribution: The prevalence of arthritis is 41% among residents in the 93 non-metropolitan counties and 35% among residents in the 22 metropolitan counties. The prevalence of arthritis does not vary substantially among BRFSS districts in Missouri.

Figure 7: Percent of All Adults with Arthritis, by BRFSS Districts



HOW DOES ARTHRITIS AFFECT PEOPLE?

Arthritis affects the quality of life of 1 in 3 adults in Missouri and will continue to grow as a public health problem as the state's population ages. Arthritis is the leading cause of disability in the United States, limiting everyday activities for eight million Americans.⁵ Hip and knee osteoarthritis are the leading causes of arthritis disability and the primary reasons for expensive joint replacement surgery. In Missouri, arthritis was the 7th leading cause for hospitalization in 1995.

General Health

People who have arthritis are three times more likely to report poor health status than the general population.

Physical Health

The physical symptoms of arthritis include pain, loss of joint motion and fatigue. These symptoms make it difficult for people with arthritis to be as physically active as the rest of the population. This puts people with arthritis at a higher risk for other chronic conditions such as cardiovascular disease, diabetes, hypertension, obesity, depression, and anxiety. In Missouri, people with arthritis are more than three times as likely to report poor physical health compared to others in the population. They also report a significantly higher average number of days in the past month that poor physical health prevented them from performing their usual activities when compared to those without arthritis.



Mental Health

Arthritis is often accompanied with psychological stress, depression, anger, and anxiety. These symptoms make it very difficult for people with arthritis to cope with the pain and disability associated with their disease, which in turn can lead to feelings of helplessness or lack of self-control. This feeling of helplessness can subsequently lower the self-esteem of people with arthritis.

In Missouri, people with arthritis are twice as likely to report days of poor mental health compared to others in the population. People with arthritis report a significantly higher mean number of days in the past month that poor mental health prevented them from performing their usual activities when compared to people without arthritis.



Table 2

CO-MORBIDITY

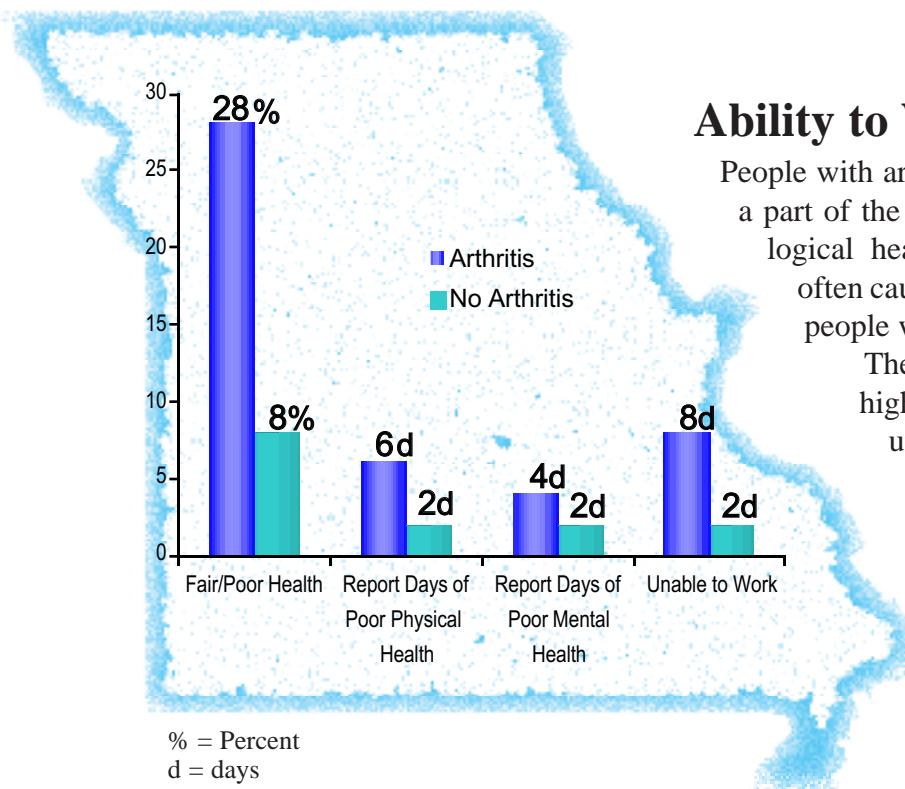
People with arthritis are also likely to have other health problems.

PREVALENCE (%) OF OTHER CONDITIONS ASSOCIATED WITH ARTHRITIS

	WITH ARTHRITIS	WITHOUT ARTHRITIS	WITH ARTHRITIS	WITHOUT ARTHRITIS
ASTHMA	13.5	9.7	HIGH BLOOD CHOLESTEROL	31.2
COPD*	14.1	5.4	HIGH BLOOD PRESSURE	37.5
DIABETES	10.2	3.5	OBESITY	30.0
OSTEOPOROSIS	17.5	5.6		16.9

* Chronic Bronchitis, Emphysema, or Chronic Obstructive Pulmonary Disease (COPD)
1996 and 1999 Missouri BRFSS
Co-morbidity is defined as having multiple diseases/illnesses/health conditions.

Figure 8: Impact of Arthritis on Measures of Health and Ability to Work Among Adults With and Without Arthritis



Ability to Work

People with arthritis are often disabled and unable to be a part of the work force as poor physical and psychological health impacts their ability to work. This often causes an economic burden on the families of people with arthritis.

The prevalence of arthritis is significantly higher among people who are retired or are unable to work. Of retirees, 59% have arthritis. Of those unable to work, 74% have arthritis. Statewide, people with arthritis are approximately four times more likely to be unable to work than others in the population. (Figure 8)

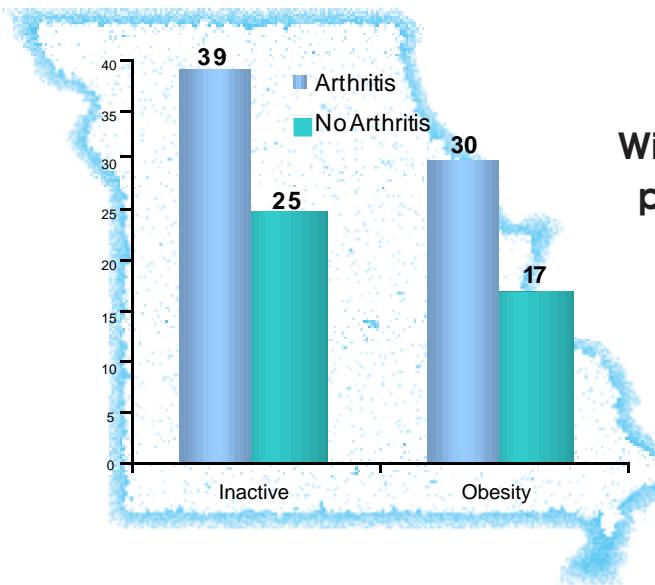
HOW DOES ARTHRITIS AFFECT PEOPLE?

continued

Physical Activity

Results from the 1999 BRFSS show that individuals with arthritis are more likely to be physically inactive when compared with those without arthritis. Of Missourians with arthritis, 39% report being physically inactive compared to 25% of the population without arthritis.

Figure 9: Prevalence of Obesity and Physical Inactivity Among Persons With and Without Arthritis



With most types of arthritis, regular physical activity and maintaining an appropriate body weight can be helpful in keeping arthritis-related discomfort to a minimum, while maximizing physical ability.

Awareness and Healthcare

Early diagnosis and appropriate, ongoing arthritis management are known to reduce long-term discomfort and disability and improve emotional health and overall quality of life. Yet, in Missouri, among people diagnosed with arthritis 58% do not know the type of arthritis they have and 66% are not under a physician's care for arthritis.

Although some forms of arthritis are treatable, these numbers suggest that there are people who are experiencing unnecessary pain and

Early diagnosis and appropriate, ongoing arthritis management are known to reduce or improve long-term discomfort and disability and improve emotional health and overall quality of life.

disability because they are not receiving the care they need for their arthritis.

Compared to those without arthritis, individuals with arthritis are more likely to have:

- 1) Medicare as the primary payer of medical costs,
- 2) cost as a barrier to visit a physician, and
- 3) barriers other than cost to visit a physician.

HOW IS ARTHRITIS MANAGED?

The following are a few guidelines for maintaining a healthy lifestyle and managing arthritis. These guidelines, however, are not intended as a substitute for personal medical advice or health advice that should be obtained directly from a physician or healthcare professional.

Physical Activity

People with arthritis have difficulty meeting the general recommendations for regular physical activity, but some regimen of regular exercise is an important component of managing most types of arthritis. An appropriate exercise program can be determined with the assistance of physicians or other healthcare professionals, such as physical therapists or occupational therapists. A regular exercise program that includes flexibility, strengthening and aerobic exercises helps to: lessen fatigue; build stronger muscles and bones; increase flexibility; and, improve stamina,

general health, and sense of well being.



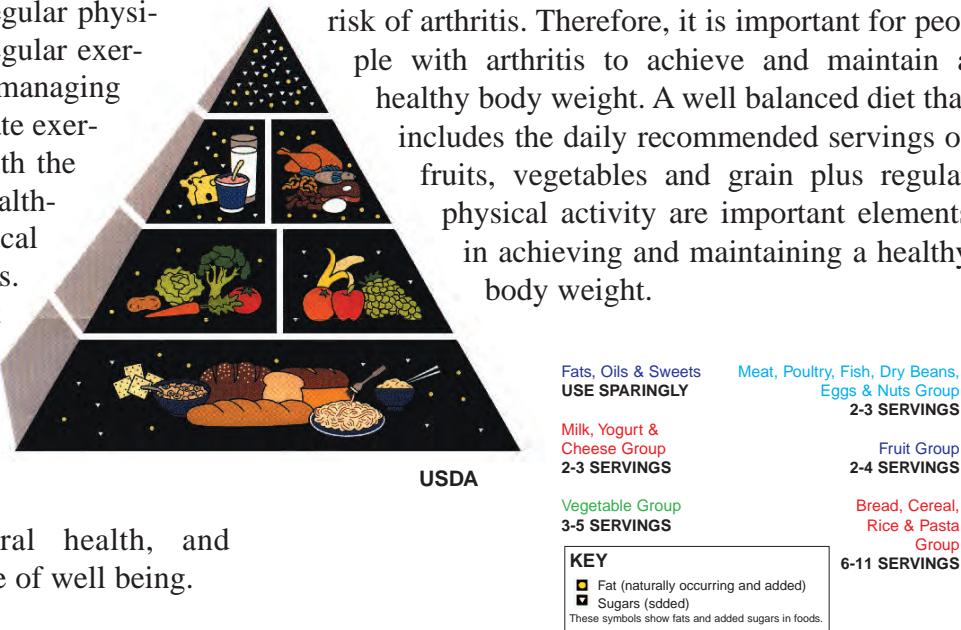
for early medical treatment. There are nearly 200,000 people in the U.S. who do not see a physician for their arthritis even when the disease is causing a limitation in activity! It is important for people with symptoms of arthritis to consult a physician and seek medical advice.⁷

Prevention and Management

An active and healthy lifestyle can help prevent the onset or progression of arthritis and improve quality of life by reducing the symptoms of arthritis. Early diagnosis of all types of arthritis is important

Weight Management

Being overweight is associated with an increased risk of arthritis. Therefore, it is important for people with arthritis to achieve and maintain a healthy body weight. A well balanced diet that includes the daily recommended servings of fruits, vegetables and grain plus regular physical activity are important elements in achieving and maintaining a healthy body weight.



Joint Protection

Accidents (traumatic) or overuse (repetitive) of a particular joint can cause joint injuries. This increases the possibility that someone may develop osteo-arthritis in the future. Therefore, using proper joint protection techniques daily is an important prevention strategy. Joint protection means using joints in ways that avoid excess stress. Maintaining muscle strength, having good posture and using proper body mechanics during daily tasks are all essential components of proper joint protection.



HOW IS ARTHRITIS MANAGED?

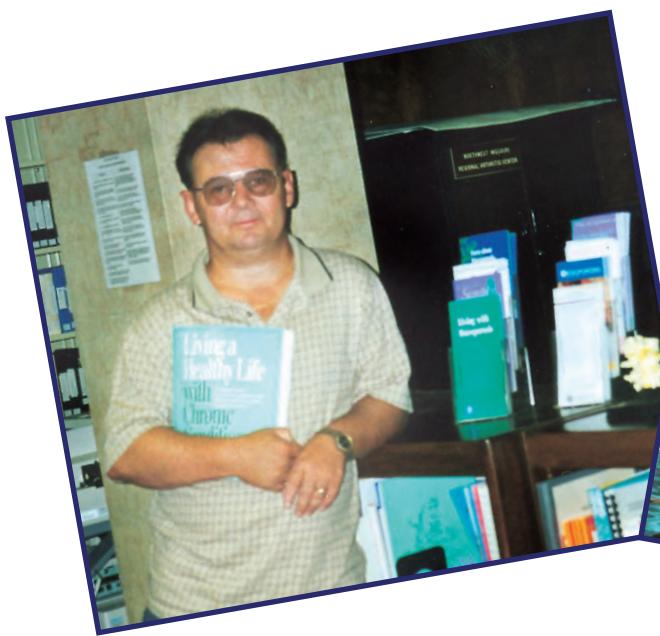
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Stress Management

Depression is a common symptom associated with arthritis. The more depressed a person becomes, the more pain he/she feels. This can result in increased stress.⁶ Arthritis often means making lifestyle changes. To overcome the feelings of stress and depression a person with arthritis must learn to prioritize their daily activities and accept the reality that they cannot do everything.

Self-Management

The Arthritis Self-Help Course is a six-week course that teaches people with arthritis to manage their disease and minimize its effects. This course is proven effective in reducing arthritis-related pain by 20% and physician visits by 40%, thus reducing overall healthcare costs. The delivery system for this course is typically a community group setting of about 15 people and includes information on nutrition, education on types of arthritis and the uses and effects of various medications. This course is interactive, teaching participants relaxation and pain management. In addition, physical activities are individually designed.



Health Professionals' Role

Health professionals can greatly enhance and extend the reach of arthritis related messages to local communities. They have an excellent opportunity to educate people on prevention strategies and the importance of early diagnosis. It is important that they stay current on the burden of arthritis, recognize it as a serious chronic condition and fully understand its impact on disability and quality of life. By staying current on new research and appropriate management strategies, referring patients to local exercise and self-help programs and examining the individuals overall mental and physical health, health professionals can improve the lives of the people they serve with arthritis.

Communities' Role

Many communities have coalitions that address chronic diseases and their risk factors. These coalitions can also promote partnerships to deliver consistent messages on arthritis that reach entire populations, thus increasing awareness throughout the community. Communities can help by providing facilities such as indoor/outdoor tracks and swimming pools to promote exercise for people with arthritis. Public access places such as community centers, YMCAs, churches and schools can help by providing space for Arthritis Seminars, Self-Help Courses, and land exercise programs.



EDUCATION, RESEARCH & CARE

Taking care of people with arthritis has a long history in Missouri. In the 1970's a grassroots effort and a state task force began assessing what communities knew about arthritis and what they needed. Eventually these efforts led to the passage of legislation that established the Missouri Arthritis Program. In addition to an infrastructure to provide public health outreach, there are two Chapters of the Arthritis Foundation and two Chapters of the Lupus Foundation of America Inc. in Missouri. To augment patient and public arthritis education, Missouri has three major academic institutions committed to clinical and biomedical research in the field of arthritis. These institutions also support specialized training of new rheumatologists. Additionally, the Missouri Arthritis Rehabilitation Research and Training Center (MARRTC) is the only federally funded arthritis rehabilitation research and training center in the United States. Furthermore, there are several physicians around the state conducting clinical trials for new medications. The following section will highlight the efforts of these organizations that are committed to improving the lives of individuals with arthritis. The Resources/References section contains information for all of the following organizations.

The Missouri Arthritis and Osteoporosis Program

The Missouri 82nd General Assembly established the arthritis program (RSMo 192.700). The aims of the program are to promote optimal health and quality of life for all Missourians affected by arthritis, rheumatic diseases and related musculoskeletal conditions.

Program aims are in accordance with the goals of Healthy People 2010 of increasing the quality and years of healthy life for persons with arthritis; and the goal of the Missouri Department of Health to reduce the burden of chronic diseases. This act established a governing board, The Missouri Arthritis Advisory Board (MAAB) and a network of seven regional arthritis centers. The Board serves in an advisory capacity to the Department of Health, Missouri Arthritis Program. The 25 member Board is comprised of physicians, rheumatologists, nurses, physical therapists, occupational therapists, persons with arthritis, and community partners.

The Regional Arthritis Centers (RACs) serve as local resources for arthritis information, medical referrals and arthritis programs and services. These services address and support key issues related to arthritis through self-management programs, professional education programs, public awareness, health fairs, individual counseling, seminars, etc. Each center serves

from 10 to 24 counties. The seven centers are located within facilities (hosting institutions) that have the ability to provide up-to-date and comprehensive health care for individuals with arthritis and other related conditions.

In 1995, The Missouri Arthritis Program expanded services to children with arthritis. As a result of collaboration between the Missouri Department of Health's Division of Chronic Disease Prevention and Health Promotion (DCDPHP) and the Division of Maternal, Child, and Family Health, five Juvenile Arthritis Care Coordinators now assist children with rheumatic disease and their families.

In addition, in 1995, the 88th General Assembly passed legislation (RsMO 192.640) enabling the Department to establish, promote, and maintain an osteoporosis prevention and education program. The program educates Missourians about the causes of osteoporosis, options for prevention, and the value of early detection and possible treatments.

The Missouri Arthritis Program and Osteoporosis Program joined forces to become the Missouri Arthritis and Osteoporosis Program (MAOP) in order to reach more Missourians more efficiently by building on the infrastructure of the RACs.

The Missouri Arthritis and Osteoporosis Program

The Bureau of Chronic Disease Control, DCDPHP, Missouri Department of Health, administers the MAOP. The program has been recognized by CDC as a model public health response to the nation's most pervasive chronic disease. In addition to provisions of secondary and tertiary prevention programs, the MAOP is committed to continuing to define the problem of arthritis and osteoporosis in the state. The MAOP supports the development and implementation

of appropriate interventions and continually evaluates the success of these efforts.

Programs and services in Missouri are possible only through legislation and the dedication of program staff, the Missouri Arthritis Advisory Board, Regional Arthritis Centers, and the many local, regional, state, and national partners. Information about essential partners follows.

Missouri Arthritis Foundation Chapters

The Arthritis Foundation has a history of providing arthritis programs and services to Missouri residents for over 50 years. Currently, there are two chapters in Missouri. The Eastern Missouri Chapter was established in 1949 and the Western Missouri Chapter was founded in 1979. The Arthritis Foundation's overall mission is to improve lives through leadership in the prevention, control and cure of arthritis and related diseases. In order to achieve this mission, the Missouri Arthritis Foundation chapters provide and/or partner to provide programs for people with arthritis, public education, professional education, and support for research.

The Arthritis Foundation chapters offer several educational and exercise programs to help people with arthritis or related diseases better control and manage their disease. The programs include: Arthritis Self-Help Course, Fibromyalgia Self-Help Course, People with Arthritis Can Exercise (PACE), Arthritis Foundation/YMCA Aquatics Class, and Arthritis and Fibromyalgia Support Groups.

The Arthritis Foundation, Missouri Chapters also provide public education and information on arthritis through literature, publications, community educational forums, community health fairs, physician

referral information and free speakers to community groups. In addition, the Arthritis Foundation is an important educational resource for children with arthritis and their families.

The Missouri chapters and the American Juvenile Arthritis Organization (part of the Arthritis Foundation) provides educational activities throughout the year for children with juvenile arthritis and their families. These activities also provide a means of peer support for kids and parents affected by juvenile arthritis.

Finally, the Arthritis Foundation chapters have long been supporters of arthritis research. The Arthritis Foundation funds arthritis and arthritis related research to find cures for and to develop better ways to treat the many forms of arthritis. Currently, the Arthritis Foundation funds research projects at universities and medical institutions and supports fellowships to train and recruit new Rheumatologists.

University of Missouri-Columbia St. Louis University Washington University

These Missouri Universities are internationally renowned for programs in the areas of arthritis research, education and clinical care. A variety of scientific areas of investigation involve research on rheumatic diseases. This includes such diverse research in the areas of Systemic Lupus Erythematosus, mixed connective tissue diseases, rheumatoid arthritis, juvenile arthritis, auto-antibodies, nutrition, aging, obesity, exercise, apoptosis, autoimmunity, and many others. Extramural financial support is received from the National Institutes of Health,

Department of Veterans Affairs, Department of Education, the Arthritis Foundation, United States Department of Agriculture, Lupus Foundation of America Inc., and others as evidenced by the superb caliber of their research. In addition, each institution, as well as other health care institutions throughout the state, offers subspecialty training for rheumatology and specialized care for patients with rheumatic diseases, including clinical trials of new therapies.

Missouri Arthritis Research Rehabilitation and Training Center

The University of Missouri has been home to the only Arthritis Rehabilitation Research and Training Center (MARRTC) in the United States since 1988. MARRTC conducts several research projects to help improve the lives of people with arthritis. Their studies examine the benefits of exercise, employment for people with arthritis, and ways to reduce depression. MARRTC contributes to arthritis programs in Missouri by:

- 1) working with the University's College of Agriculture to assist farm families deal with problems caused by arthritis,
- 2) training students and professionals to improve arthritis care, and
- 3) providing information to people in Missouri and all over the world.

The MARRTC website contains articles and links to all kinds of arthritis information, (www.muhealth.org/~arthritis).

Lupus Foundation of America, Inc. - Missouri Chapters

The Lupus Foundation of America, Inc. currently has two chapter offices in Missouri. One in Kansas City and the other in St. Louis. The Foundation is a not-for-profit organization with a mission to improve the quality of the lives of people living with lupus through community awareness and public education, research and patient services and support. It is governed by a volunteer board of directors that works closely with a medical advisory council made up of physicians from the surrounding area.

CONCLUSION

Results show that arthritis is a major public health issue in the state, affecting one out of every three (37%) adults. In addition, disabilities from arthritis result in enormous health care costs for individuals, their families and the state. Missouri can expect the impact of arthritis to increase dramatically as the “baby boomers” age.

Arthritis and other rheumatic conditions seldom cause death, but have a substantial impact on health. The findings contained in this report suggest that persons with arthritis have substantially decreased health-related quality of life than persons without arthritis.

people with both osteoarthritis and rheumatoid arthritis, but increased knowledge about how these diseases operate have led to a better understanding of some of their causes and ways to manage the disease for better outcomes. Physical inactivity and obesity are reported more often among persons with arthritis than the general population. Both of these behaviors need to be addressed in order to improve outcomes as well as prevent further complications for people with arthritis, while in some cases preventing disease.

Despite the significant impact of arthritis, many individuals still view arthritis as benign or inevitable. In recent years, the management of arthritis has

“It is imperative, if Missouri is going to reduce it’s burden of arthritis, that health agencies, medical societies, academic institutions, nonprofit organizations, health professionals, patients, and volunteers work together to improve the health and quality of life of Missourian’s affected by this disease.”

Osteoarthritis is the most common form of arthritis. The risk of having osteoarthritis increases as people get older. In addition to advancing age, risk factors for osteoarthritis include joint trauma, obesity and repetitive joint use. Inflammatory forms of arthritis such as rheumatoid arthritis and lupus are characterized by chronic inflammation. In addition to affecting joints, the disease can also affect connective tissue throughout the body and can cause disease in a variety of organs including the lungs and heart. These diseases are potentially disabling; individuals with these diseases are at an increased risk of dying from respiratory and infectious diseases. All forms of arthritis can drastically reduce a person’s quality of life.

Now is a very exciting time for arthritis research. Not only are a variety of new treatments available for

advanced immensely. What we know about risk factors, causes, who is affected, and how to treat and improve quality of life are no longer the mystery they once were. Arthritis is a complicated disease. It is essential that we convey recent advancements and research to the public, people with arthritis, health professionals and decision-makers. Only then can we begin addressing this problem effectively.

It is imperative, if Missouri is going to reduce it’s burden of arthritis, that health agencies, medical societies, academic institutions, nonprofit organizations, health professionals, patients, and volunteers work together to improve the health and quality of life of Missourians affected by this disease.

RESOURCES/REFERENCES

STATE OF MISSOURI

MISSOURI ARTHRITIS & OSTEOPOROSIS PROGRAM

Missouri Department of Health
800-316-0935
www.health.state.mo.us/

REGIONAL ARTHRITIS CENTERS

Central Missouri Regional Arthritis Center
573-882-8097
Juvenile Arthritis Program: 573-884-3978
www.muhealth.org/~arthritis/cemrac

Greater Kansas City Regional Arthritis Center
816-932-2351 or 2020
Juvenile Arthritis Program: 816-234-3229
www.muhealth.org/~arthritis/kcrac

Greater St. Louis Regional Arthritis Center
314-286-2359
Juvenile Arthritis Program: 314-577-8470
www.muhealth.org/~arthritis/slrac

Northeast Missouri Regional Arthritis Center
800-626-5266
www.muhealth.org/~arthritis/nerac

Northwest Missouri Regional Arthritis & Osteoporosis Center
800-443-8858
Juvenile Arthritis Program: 816-271-7057
www.muhealth.org/~arthritis/nwrac

Southeast Missouri Regional Arthritis Center
573-331-5880
www.muhealth.org/~arthritis/serac

Southwest Missouri Regional Arthritis Center
800-835-5197
Juvenile Arthritis Program: 417-885-2445
www.muhealth.org/~arthritis/swrac

OFFICE OF MINORITY HEALTH

Missouri Department of Health
573-751-6064

ARTHRITIS FOUNDATION

Eastern Chapter Office
314-991-9333
www.missouriarthritis.org/

Eastern Chapter-Central Missouri Branch
573-256-1092

Eastern Chapter-Southeast Missouri Branch
877-744-4993

Western Chapter Office
888-719-5670
www.arthritis.org/chapters/chapter.asp?Chapid=58

NATIONAL

ARTHRITIS FOUNDATION

National Office
800-283-7800
www.arthritis.org

LUPUS FOUNDATION OF AMERICA, INC.

National Office
800-558-0121
www.lupus.org

CENTERS FOR DISEASE CONTROL & PREVENTION

Division of Adult & Community Health
770-488-5464
www.cdc.gov/nccdphp/arthritis/index.htm

AMERICAN COLLEGE OF RHEUMATOLOGY

404-633-3777
www.rheumatology.org

NATIONAL INSTITUTES OF HEALTH

National Institutes of Arthritis & Musculoskeletal and Skin Diseases
877-226-4267
www.nih.gov/niams

National Institute on Aging
301-496-1752
www.nih.gov/nia

Osteoporosis and Related Bone Diseases National Resource Center
202-223-0344
www.osteo.org

ASSOCIATION OF STATE & TERRITORIAL CHRONIC DISEASE PROGRAM DIRECTORS

National Arthritis Council
703-538-1795
www.astcdpd.org/

UNITED STATES DEPARTMENT OF AGRICULTURE

202-720-2791
www.usda.gov/

UNIVERSITIES

St. Louis University School of Medicine
Division of Rheumatology
314-577-8467
www.slu.edu

University of Missouri-Columbia
School of Medicine
573-884-7892
www.hsc.missouri.edu/~medicine/

Virtual Health Care Team
573-884-6705
www.hsc.missouri.edu/~sharp/vhctwww/

Washington University School of Medicine
Division of Rheumatology
314-286-2635
<http://wums.wustl.edu>

MISSOURI ARTHRITIS REHABILITATION RESEARCH & TRAINING CENTER (MARRTC)

University of Missouri-Columbia
877-882-6826
www.muhealth.org/~arthritis/

MISSOURI AGGRABILITY PROJECT

University of Missouri-Columbia-Agricultural Engineering Extension
800-995-8503
www.fse.missouri.edu/agrability/

LUPUS FOUNDATION OF AMERICA, INC.

Missouri Chapter (St. Louis)
800-958-7876

Kansas City Chapter
816-761-0850
www.crn.org/lupus/

DEPARTMENT OF SOCIAL SERVICES

Division of Aging
314-751-3082
www.dss.state.mo.us/da/da.htm

GOVERNOR'S COUNCIL ON PHYSICAL ACTIVITY

314-751-0915
www.mocouncilonfitness.org

GOVERNOR'S COUNCIL ON DISABILITY

314-751-2600
www.dolir.state.mo.us/gcd/index.htm

RESOURCES/REFERENCES continued

REFERENCES

1 Helmick CG, Lawrence RC, Pollard RA, Lloyd E, Heyse SP. Arthritis and Other Rheumatic Conditions: Who is Affected Now, Who Will be Affected Later? *American Journal of Rheumatology* 1995; 8(4):203-211

2 Behavioral Risk Factor Surveillance System, 1999

3 Yelin E, Callahan L. The Economic Cost and Social and Psychological Impact of Musculoskeletal Conditions. *Arthritis and Rheumatism* 1995; 38:1351-1362.

4 Missouri Department of Health. Chronic Disease Report 2000.

5 CDC. Prevalence of Arthritis—United States, 1997. *MMWR* 2001; 50:334-336.

6 American College of Rheumatology. Clinical Care in the Rheumatic Diseases, 1996.

7 CDC. Targeting Arthritis: The Nation's Leading Cause of Disability, At-A-Glance 2000.

ADDITIONAL REFERENCES

CDC. Prevalence of Disabilities and Associated Health Conditions Among Adults—United States, 1999. *MMWR* 2001; 50:120-125.

CDC. Health-Related Quality of Life Among Adults With Arthritis—1996-1998. *MMWR* 2000; 49:366-369.

Johns Hopkins White Papers 2000. The Johns Hopkins Medical Institutions. Baltimore Maryland

Arthritis Foundation, Association of State and Territorial Health Officials, and Centers for Disease Control and Prevention. National Arthritis Action Plan: A Public Health Strategy. Atlanta, Georgia: Arthritis Foundation, 1999.

CDC. Chronic Disease Notes & Reports. Fall 1999, Volume 12, Number 3.

Lorig K, Mazonson P, Holman H. Evidence Suggesting that Health Education for Self-Management in Patients With Chronic Arthritis Has Sustained Health Benefits While Reducing Health Care Costs. *Arthritis and Rheumatism* 1993; 36:436-439.

Minor MA, Hewett JE, Webel R, et al. Efficacy of Physical Conditioning Exercise in Rheumatoid Arthritis and Osteoarthritis. *Arthritis & Rheumatism* 1989; 32(11):1396-1405.

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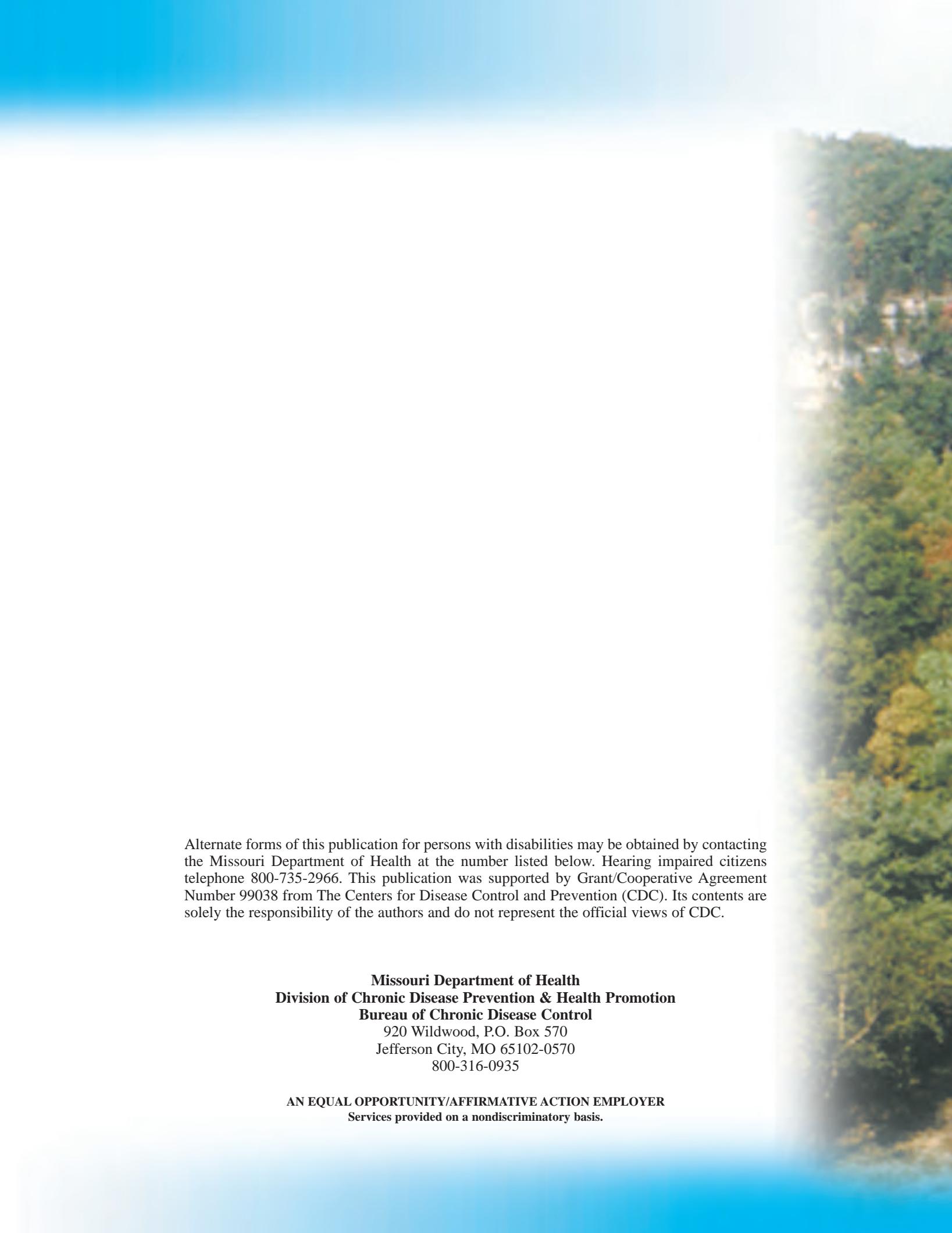
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